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Published in:
Architecture and Phenomenology

Publication date:
2009

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Carter, A. (2009). Between Earth and Sky: The work of Jørn Utzon, as an exemplary phenomenological approach to modern architecture made concrete. In J. Baek (Ed.), *Architecture and Phenomenology: Second International Architecture and Phenomenology Conference Ecole française d'Extrême-Orient*.

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Between Earth and Sky:

The work of Jørn Utzon, as an exemplary phenomenological approach to modern architecture made concrete.

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Abstract

This paper presents a study of Jørn Utzon, as one of the most profound exponents of a phenomenological approach to modern architecture in the late twentieth century, following on from the visionary work of Frank Lloyd Wright, Le Corbusier, Alvar Aalto and Louis Kahn. According to Christian Norberg-Schulz, in *Architecture: Meaning and Place*, "Jørn Utzon represents a true continuation of the 'new tradition' opened by these pioneers. Because of his concrete, phenomenological approach to the world in which we live, he has been able to rescue architecture from the sterile impasse of late-modernism. In his works the basic elements of lived space become present: the earth, the sky and the 'between' of human existence."

Jørn Utzon's architecture ranges from the modest to the monumental; from the Kingo courtyard houses, the finest Scandinavian example of humane housing, to the sculptural abstraction and technical innovation of the Sydney Opera House, that has come to define the iconic identity not only of Sydney, but also Australia; from the understated monumentality of the Bagsværd Church with its poetic cloud-like undulating ceiling, through to such visionary unrealised projects as the subterranean Silkeborg Art Museum. Utzon's work embodies a visionary approach to architecture that is site specific and poetic, tectonic and humane; informed by a profound appreciation of nature and diversity of human cultures, as sources of inspiration and analogy, combined with a sense of architecture as art and an innovative approach to the use of technology

In his work, Utzon displays a Nordic sensibility to nature and integrity of design that strives for the attainment of quality in architecture and design, through the simple, honest yet noble synthesis of form, material and function, motivated by social values. To

this essentially regional response, Utzon combines a fascination for the architectural legacies of foreign cultures. These influences include the architecture of the ancient Mayan civilisation, as well as the Islamic world, China and Japan.

Utzon achieves a poetic, often monumental and iconic, yet always locally sensitive architecture while subtly utilizing and expanding the meaning of transcultural influences. Jørn Utzon by his own admission likes to work at the “edge of the possible” and has often been ahead of his time. With reference to influential mentors including his tutor Professor Steen Eiler Rasmussen, author of *Experiencing Architecture* and Alvar Aalto, the paper will examine and present an understanding of Jørn Utzon’s exemplary phenomenological approach to architectural design.

Author biography

Adrian Carter, Architect MAA, B.Arch (1982) and Dipl. Arch. (1985) from Portsmouth School of Architecture, (with Prof. Geoffrey Broadbent). Visiting scholar, Royal Danish Academy for Fine Arts 1982-84, with Prof. Jan Gehl). Visiting Scholar, University of Cambridge, School of Architecture 1998 (with Prof. Dalibor Vessily)

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"All profound work arises from a dialogue between actuality and dream. Imagination fuses observation and fantasy, memory and desire, past and the future. Your images traverse space and time, unite traditions of distant cultures, and merge natural phenomena with geometry, history and Utopia. You have shown how to turn motion into form, matter into luminance, and gravity into flight"

Juhani Pallasmaa, *A tribute to Jørn Utzon*, 2008

Jørn Utzon's work embodies a visionary approach to architecture that is site specific and poetic, authentically tectonic in its construction and use of material and humane, in its ambitions for society and for the experience of the individual. His is an architecture that is informed by a profound appreciation of nature, as a source of inspiration and analogy, and contemporary interpretation of timeless archetypal and transcultural influences; combined with a sense of architecture as art that should be experienced and an innovative approach to the application of technology

He transcends the schism that has existed between a phenomenological understanding of architecture and its appreciation of the specific qualities of place with the modernist use of the latest universally applicable technology, as evidenced throughout his work, but most notably in his iconic masterpiece the Sydney Opera House.

The immense breadth of his architecture ranges from the most modest, yet handsome and humane Kingo houses, to the supreme sculptural abstraction and technical innovation of the Sydney Opera House and the understated monumentality of the Bagsværd Church with its poetic undulating ceiling, through to such visionary unrealised projects as the submerged Silkeborg Art Museum, with its remarkable proposed spatial qualities, that still fires the imagination.

According to Christian Norberg-Schulz in *Architecture: Meaning and Place*, Jørn Utzon represents a true continuation of the “new tradition” opened up by such pioneers, as Frank Lloyd Wright, Le Corbusier, Alvar Aalto and Louis Kahn. As Norberg-Schulz says of Utzon “Because of his concrete, phenomenological approach to the world in which we live, he has been able to rescue architecture from the sterile impasse of late-modernism. In his works the basic elements of lived space become present: the earth, the sky and the “between” of human existence.” (Norberg-Schulz, 1988, p.230)

This paper presents a study of Jørn Utzon, through consideration of his formative influences and resulting works that have established him as one of the most profound exponents of a phenomenological approach to modern architecture in the late twentieth century.

To understand Utzon as one would any creative individual, one should look to the influences and environment that formed his development. As Juhani Pallasmaa states, “one of the most important ‘raw materials’ of phenomenological analysis of architecture is early childhood memory. Pallasmaa goes on to say that,

”We are used to thinking of childhood memories as products of the naive consciousness and imprecise memory capacity of the child, something with great appeal, but of as little real value as our dreams. But both of these preconceived ideas are wrong. Surely the fact that certain early memories retain their identifiability and emotional force throughout our lives provides convincing proof of the importance and authenticity of these experiences, just as our dreams and daydreams reveal the most real and spontaneous contents of our minds.” (Pallasmaa, 2005, p.91).

Therefore without wishing to take an overtly romantic view, the influence of his parents, particularly his father, experiences of his youth and early education, certainly played a profound role in the development of Utzon’s interests, understanding of the world and subsequent approach to architecture. Jørn Utzon, (born 9th April 1918, Copenhagen), grew up in the provincial industrial harbour town of Aalborg; where his father, who had trained as a naval architect in England, was the chief engineer at the local shipyard.

As Jørn Utzon discussed on many occasions, it was his childhood experience of seeing the huge hulls of ships, that his father was responsible for, under construction in dry-dock, that was later to give him the formal language, sense of construction and also most importantly the personal self-confidence to realise the huge boat-like roof-shells of the Sydney Opera House. In so doing creating Sydney’s emblematic landmark, that is so site specific and poetically defines the “*genius loci*” of its dramatic maritime location.

During his time at the Aalborg shipyards, Aage Utzon gained an international reputation for designing yachts renowned for their speed and distinctive curvature of their stern forms, a type of boat known as a *Spidsgatter* which had its origins in the local herring fishing boats that over time had evolved from the original Viking ships that had much earlier sailed from the region. It was through working with his father, that Jørn Utzon first experienced the joy of seeing something physically take shape; gained an understanding of the forces and stresses in construction; learned to think of complex 3-dimensional forms by means of 2-dimensional sections and came to appreciate the inherent qualities of different materials. In his architecture Utzon has always strived to use exactly the right materials, according to each material's specific qualities and dimension them perfectly, to create the same harmony of construction one experiences in a finely crafted boat.

Through his father Utzon also developed a love of outdoor pursuits, such as hunting, fishing, as well as a profound passion for sailing. These interests developed in Utzon an acute awareness of and ability to read the natural environment. The development of Utzon's remarkably acute sense of observation and skills in interpreting natural phenomena, in many ways compensated for a lack of academic aptitude and prowess at school that was largely due to his dyslexia, of which there was little understanding at the time and his greater interest in being out in nature.

Furthermore Aage imbued in Utzon his deep appreciation of nature as a source of insight and inspiration, particularly as a designer. Aage studied wave forms and the movement of fish, as a means to making improvements to the design of his boats. Aage Utzon's personal dictum that one should set aside an early solution if a better one presented itself meant that he continually modified and tested prototypes, as a means of improving and refining his designs in the quest for perfection. These skills and his approach to design, a striving for sublime perfection, he passed on to Utzon. It is this background that informs Utzon's singular working methods in the field of architecture, his extensive use of models and full scale prototypes, reworking his designs until fully satisfied.

In 1930 Utzon's parents visited the famous Stockholm exhibition, which introduced the modern international style of white functional architecture and design to Scandinavia. Inspired by what they experienced at the exhibition the Utzon family completely changed their lifestyle, rejecting totally the old petit bourgeois way of life and replaced it with a healthy, less formal approach to life. They removed all the heavy, impractical furniture and totally redid their home with the focus being on space and light, together with simplicity, honesty of materials and expression in terms of design. This early experience made Utzon realise just how much architects can influence society.

Concurrent with his early understanding of design inspired by the study of nature, the teenage Utzon also developed a passion for art and a more poetic, emotional appreciation of nature. He

came to know a number of artists, including the Danish artist Poul Schrøder and most notably the Swedish painter Carl Kylberg. Already an accomplished draughtsman, Utzon learnt from Schrøder how to draw freehand with soft expressive lines and from Kylberg, Utzon gained a painter's eye for nature, in terms of the relationship between colour, form and light. This artistic interest engendered in Utzon openness to the world around him and curiosity in its underlying structures.

Utzon did consider becoming an artist, but was persuaded to follow a more secure career by his uncle Einar Utzon-Frank a distinguished sculptor and Professor at the Royal Danish Academy of Arts in Copenhagen, where Utzon instead chose to study architecture. Utzon's interest in art and its relation to architecture though has remained throughout his career. He had a particular appreciation for analytical artists such as Picasso, interested in the structure behind appearance and who move freely between different media, developing and articulating conceptual ideas variously in painting, as well as more tactile media of sculpture, ceramics and weaving.

The theme of art integrated in architecture is a recurring one in Utzon's work, as seen in the collaboration with his artist daughter Lin Utzon at Bagsværd Church and Utzon's own recent tapestry for the Sydney Opera House, inspired by a painting by Raphael and the cut-out paper collages of Matisse.

As a student, one of Utzon's notable teachers was the architect Kay Fisker, who extolled the ideal of 'constructive logic' as exemplified by the entirely brick built Grundtvig Church, in Copenhagen by P.V. Jensen-Klint. This total commitment to material honesty established a lasting principle for Utzon. The appreciation of material integrity in construction was reinforced by the well established tradition at the Academy of requiring the students to gain practical training in traditional building skills, such as bricklaying and carpentry as a prerequisite for becoming an architect.

Significantly Utzon also came to the attention of Professor Steen Eiler Rasmussen, later to become the internationally renowned author of *Experiencing Architecture* (1959), who profoundly informed much of Utzon's subsequent thinking in architecture. Certainly Rasmussen encouraged Utzon to understand how to experience and appreciate architecture in more than merely visual terms through a wide range of sources from traditional Chinese building, of which Rasmussen had considerable knowledge, to the contemporary work of Le Corbusier. Notably Rasmussen introduced Utzon to one of the essential reference works on Chinese architecture the *Ying Tsao fa Shi* the Chinese building manual of the enlightened Sung Dynasty (960-1279). Utzon was greatly fascinated by the systemisation of components and the beauty of the way colour was used to express the construction, this later became an inspiration for Utzon in the construction of the Sydney Opera House. While among other more contemporary publications that played a role in Utzon's education,

were the early volumes of Le Corbusier's *Oeuvre Complète*. Inspired by such sources of inspiration both ancient and the most modern, Utzon reacted against the austere formal international modernism as practiced by Arne Jacobsen, whose buildings it was jokingly said could all be modelled with a box of matches, "*flat, it was a housing scheme; standing on its long edge, an apartment block; on end, an office tower*" (Weston, 2002, p. 18). Already as a student Utzon, who had little interest in the Classical tradition, was through the study of vernacular buildings and forms in nature, seeking other sources of architectural form.

On graduating in 1940, Utzon went to work Stockholm, where he experienced first-hand the work of Gunnar Asplund, whom he greatly admired as the father figure of modern Scandinavian architecture; that for Utzon was humane, socially responsive, related to the landscape and informed by an affinity with nature.

Utzon was similarly inspired by Alvar Aalto, who further developed Scandinavian modernism in a more organic direction. Though Utzon worked only briefly for Aalto, he was greatly influenced by him and one sees in Utzon's work the further development of many of Aalto's architectural themes; the modern reinterpretation of ancient and archetypal architectural forms, the use of traditional building techniques and tactile materials to humanize modern architecture; together with the poetic use of analogy to nature, such as in the recreation of landscape in built form and the inspiration of organic growth within architecture.

Utzon's organic understanding of architecture was also greatly influenced by his friendship with the leading Norwegian modernist architect, Arne Korsmo. As the son of a professor of botany, Korsmo shared with Utzon an interest in the logical structures and forms found in nature, as a source of inspiration. They both understood that everything in nature was constantly undergoing change and evolution; that there was no form in nature that was final. This principle they believed should be extended to architecture and rather than create buildings as completed works that neither could be added to or subtracted from without disturbing their perfection of form, they felt architecture should express growth and change.

The organic conception of form was, for Utzon, confirmed by D'Arcy Thompson's *On Growth and Form* (1917), in which he argued that the shape of all plant and animal life has a physical and mathematical basis and thus "*form is a diagram of forces*" with nature taking the most economical course of action prescribed by physical laws. It is our inherent understanding of this mathematical order that gives us a sense of harmony and beauty in nature. In 1948, Utzon wrote that "*The true innermost being of architecture can be compared with that of nature's seed, and something of the inevitability of nature's principle of growth ought to be a fundamental concept in architecture*", an

idea of organic growth clearly evoked in his highly original competition design for the Langelinie Pavilion in Copenhagen (1953).

Furthermore Utzon's realisation that in nature, infinite variety can be generated by a modest number of elements, provided the genesis of what he termed "Additive Architecture"; that became the basis for the realisation of his architecture. It is the underlying principle in his courtyard housing, the Espansiva timber housing system, the construction and tiling of the Sydney Opera House, through to the design of a sports complex for Jeddah and a new town centre for Farum. The organic additive principle is perhaps most poetically expressed in an early competition project for a crematorium (1945), where free-standing walls would be extended over time, with one brick added for each deceased person to be commemorated.

Utzon not only uses nature as a source for structural analogy, as in his reference to palm fronds providing the inspiration for the ribs of the Sydney Opera House shells or the joints of birds wings in flight for the intended window mullions. With his artistic sensitivity Utzon also finds universal poetic metaphors in nature, as sources of creative inspiration. The image of clouds is a strongly recurring motif in Utzon's work, as exemplified by Bagsværd Church, where the interior is conceived as a spiritual space for the congregation to gather beneath billowing concrete ceiling vaults, as if under rolling clouds, through which diffused light enters.



Conceptual sketch and interior Bagsvard Church, Denmark

For Utzon as with many of his contemporaries, the fascination with natural form, also encouraged an interest in vernacular architecture, long before the subject was widely popularised by Bernard Rudofsky's pioneering classic *Architecture without Architects* (1964). Vernacular architecture, like structures in nature, having invariably been developed and refined through a continual process of

evolution. Inspired by images of Islamic architecture Utzon visited Morocco in 1947, where he was greatly impressed by the cohesion and architectural integrity of the desert villages of courtyard houses built entirely with local clay, which unified them with the surrounding landscape. This unity of material and landscape Utzon had in mind when he later designed the Kingo houses and housing at Fredensborg. In 1949, Utzon visited the pre-Columbian ruins at Chichen Itzá, Monte Albán and Uxmal in Mexico. The Mayan and Aztec architecture he saw made a profound impression upon him, with its great stone platforms and monumental stairs rising above the dense jungle to reveal the distant surrounding view. This experience was to firmly establish a defining element in his later major civic projects, most significantly in the design of the podium for the Sydney Opera House.

It was Utzon's vision, alone among all the competitors that recognised that this unique site needed to be understood in terms of its surrounding landscape and being visible from many surrounding vantage points required a sculptural solution with regards its "fifth facade". Though having not visited Sydney, through his reading of topographic maritime charts Utzon was able to appreciate the particular morphology of the Sydney harbour basin, with its characteristic headlands that rise up just prior to falling into the sea, which he emulated in the forming of the podium. Thus the podium, with its origins in the ancient architectural idea of the raised platform, becomes in Sydney a continuation and evocation of the local natural terrain, developing further Aalto's notions of building as artificial landscape.

The Sydney Opera House is now known universally as the landmark not only for Sydney, but for all of Australia. It is the iconic building *par excellence* that has inspired so many, often desperate, visually orientated attempts to emulate its success since. However Utzon's own approach to the design was developed on the basis of the intended human experience of using the building, rather than mere image. The area in front of the podium steps provides a huge plaza for public gatherings and events, as Richard Weston has suggested it is possibly the greatest public space created in the 20th century. According to Utzon's mentor Steen Eiler Rasmussen "The architect is a sort of theatrical producer, the man who plans the setting for our lives" (Rasmussen, 1980, p.10) For Utzon the grand stairs of podium are intended to provide an almost sacral sense of rising above the humdrum everyday world, in the process providing a grand panorama of the harbour prior to entering the dramatic cavernous interior for the actual performance, having been sublimely prepared for a profound experience.

Part of the sacred experience of the building is the timeless, almost archaic experience of the podium incorporating the amphitheatres, enclosed within the cathedral-like arches of the roof shells. As one of Australia's finest architect's Richard Leplastrier, who worked with Utzon, has remarked, during its construction "you could not really tell if it was coming up or coming down," (Leplastrier,

2003) it had such a powerful presence like an ancient ruin. Steen Eiler Rasmussen, who remained a loyal admirer of Utzon's work, came to Sydney to support Utzon's continued involvement and proposed that without Utzon, the Sydney Opera House should be best left as it was at the time, as outdoor auditoriums covered by the magnificent shells.

Seemingly floating above the podium, the Sydney Opera House's signature sail-like roof shells were expressed by Utzon in his conceptual sketches as being like clouds hovering above the sea, both as experienced in nature and as evoked in ancient Chinese temple roofs floating above a stone base. While the choice of ceramic tiles to accentuate the sculptural character of the shells, owes its inspiration to one of Utzon's favourite buildings, the Great Mosque in Isfahan, Iran. The dynamic shimmering quality of the Sydney Opera House shells, which earned it the epithet *The Other Taj Mahal*, was achieved using a combination of matt and glazed ceramic tiles, specially developed to emulate freshly fallen snow; an appealing quality in the heat of a Sydney summer and one that gives the building a sense of depth in its materiality. As according to Pallasmaa, the use of such natural materials "allow the gaze to penetrate their surfaces and they enable us to become convinced of the veracity of matter" (Pallasmaa, 1994, p29).

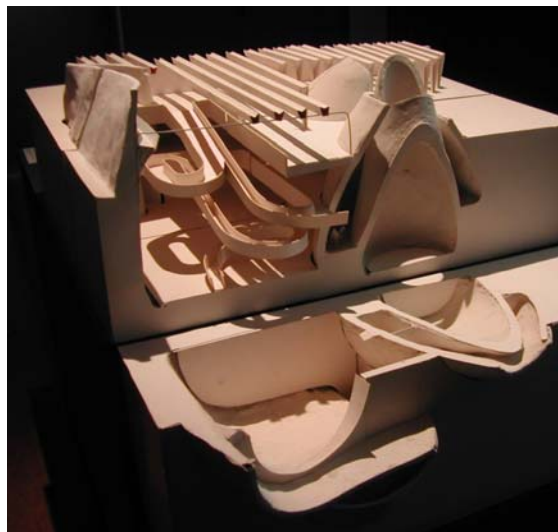


Kuwait National Assembly

Utzon's other great monumental building, the Kuwait National Assembly, similarly articulates many of the sources and principles that have consistently underpinned Utzon's architecture. With his passion for traditional Islamic architecture, Utzon looked to the local precedent of the walled city that grows around inner courtyards within its boundaries and the central street or *souk* that provides the collective spine as the organisational principle. In its emulation of Islamic urban form and in its construction it represents a clear statement of Utzon's principle of Additive Architecture. The distinctive rounded hollow columns reflect Utzon's commitment to tectonic integrity and expression

of construction, resulting in a Hypostyle Hall-like spatial quality reminiscent of Karnak and which reminds one of Louis Kahn, in its contemporary evocation of ancient archetypical architectural form. While the emblematic billowing suspended roof shading the ceremonial entrance, both achieved a reduction in material through the strength of the double-curved roof beams, but also abstractly articulates the image of surf, as a poetic metaphoric celebration of the meeting between land and sea.

Amongst Utzon's unrealised works, is one of the outstanding unbuilt projects of the 20th century, the Silkeborg Museum, designed to house the work of Asger Jorn. Inspired by the Yungang caves near Datong in China, which contain numerous often giant Buddha figures carved out of the stone; the Silkeborg Museum with its cavernous submerged galleries, shaped like emerging crocus bulbs, was intended to liberate the art within sensually curved spaces, which because of their curvature would seem to disappear. An approach to architectural experience that is only now becoming more fully developed with the advent of computer aided design and resulting interest in the creation of fluid 3-dimensional environments.



Model of Silkeborg Museum

The cave-like character of Silkeborg Museum is the natural complement to the platform Utzon was simultaneously working on in Sydney and reveals his equal fascination with the idea of the cave and the notion of prospect and refuge, as also in his own house, Can Lis (1971), on Mallorca, where the passage of time is marked by a high opening that allows a ray of sunlight to illuminate the texture of the rough cut sandstone interior wall for a few precious minutes each afternoon.

Utzon's achieves a poetic, often monumental and iconic, yet always locally sensitive architecture while subtly utilizing and expanding the meaning of transcultural influences. Jørn Utzon by his own admission liked to work at the "edge of the possible" and has often been ahead of his time. Utzon's

ideas, methods and approach are now at last becoming compatible with current aspirations and developments in architecture, particularly amongst today's avant-garde architects exploring the creative possibilities made possible by computer-aided design.

However much though the advancement of technology provides architects with new possibilities, the task of architecture will essentially remain the same, since according to Juhani Pallasmaa,

“The timeless task of architecture is to create embodied existential metaphors that concretize and structure man's being in the world. Images of architecture reflect and externalize ideas and images of life; architecture materializes our images of ideal life. Buildings and towns enable us to structure, understand and remember the shapeless flow of reality and ultimately, to recognize and remember who we are. Architecture enables us to place ourselves in the continuum of culture” As Pallasmaa goes on to say “In memorable experiences of architecture, space matter and time fuse into one single dimension, into the basic substance of being, that penetrates the consciousness. We identify ourselves with this space, this place, this moment and these dimensions as they become ingredients of our very existence. Architecture is the art of mediation and reconciliation.” (Pallasmaa, 1994, p.37).

Whether standing within the cave-like interior of Can Lis with deep sandstone walls framing Rothko-like images of sea and sky; looking up at the cloud-like chiaroscuro of the concrete ceiling folds of Bagsvaerd Church; being shaded by the seemingly billowing concrete canopy of the Kuwait Assembly Building or ascending the dramatic monumental podium stairs towards the swelling sails of the Sydney Opera House shimmering brilliantly against the sky, one fully senses that Jørn Utzon was exemplary in creating an architecture that gives us an existential sense of being in the world, between earth and sky.



Jørn Utzon: Photo Jozef Vissel

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